

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An optical glass for precision press molding characterized by comprising essential components in the form of P₂O₅, Nb₂O₅, WO₃, TiO₂, Bi₂O₃, Li₂O, and Na₂O; comprising optional components in the form of B₂O₃, BaO, ZnO, K₂O, Sb₂O₃, and As₂O₃; where the content of Bi₂O₃ ~~exceeds 4 weight percent is equal to or greater than 0.5 molar percent,~~ but does not exceed 15 molar percent; the content of Li₂O ~~exceeds 3 weight percent but does not exceed 15 weight percent is from 2 to 25 molar percent;~~ the combined quantity of Nb₂O₅, WO₃, TiO₂, and Bi₂O₃ is from 25 to 45 molar percent; the combined quantity of Li₂O, Na₂O, and K₂O is less than or equal to 42 molar percent; the combined quantity of the essential components and optional components is greater than or equal to 98 molar percent; the refractive index (nd) is from 1.75 to 2.0; and the Abbé number (vd) is from 18 to 30.

2. (currently amended): An optical glass for precision press molding characterized by comprising essential components in the form of P₂O₅, Nb₂O₅, WO₃, TiO₂, Bi₂O₃, Li₂O, Na₂O, and B₂O₃; comprising optional components in the form of BaO, ZnO, K₂O, Sb₂O₃, and As₂O₃; where the content of Bi₂O₃ is from 0.5 to 15 molar percent; the content of Li₂O ~~exceeds 3 weight percent but does not exceed 15 weight percent is from 2 to 25 molar percent;~~ the combined quantity of Nb₂O₅, WO₃, TiO₂, and Bi₂O₃ is from 25 to 45 molar percent; the combined quantity of Li₂O, Na₂O, and K₂O is less than or equal to 42 molar percent; the combined quantity of the essential components and optional components is greater than or equal to 98 molar percent; the refractive index (nd) is from 1.75 to 2.0; and the Abbé number (vd) is from 18 to 30.

3.-9. (canceled)

10. (original): A precision press molding preform comprised of the optical glass according to claim 1.

11. (original): A precision press molding preform comprised of the optical glass according to claim 2.

12.-16. (cancelled)

17. (currently amended): A precision press molding preform characterized:
by being comprised of an optical glass having essential components in the form of P₂O₅, Nb₂O₅, WO₃, TiO₂, Bi₂O₃, Li₂O, and Na₂O; optional components in the form of B₂O₃, BaO, ZnO, K₂O, Sb₂O₃, and As₂O₃; where the content of Bi₂O₃ ~~exceeds 4 weight percent is equal to or greater than 0.5 molar percent,~~ but does not exceed 15 molar percent; the combined quantity of Nb₂O₅, WO₃, TiO₂, and Bi₂O₃ is from 25 to 45 molar percent; the combined quantity of Li₂O, Na₂O, and K₂O is less than or equal to 42 molar percent; the combined quantity of the essential components and optional components is greater than or equal to 98 molar percent; the refractive index (nd) is from 1.75 to 2.0; and the Abbé number (vd) is from 18 to 30;

in that a gob of the glass in a molten state has been solidified; and
in that the preform has been shaped without mechanical processing.

18. (original): A preform for precision glass molding characterized:
by being comprised of an optical glass having essential components in the form of P₂O₅, Nb₂O₅, WO₃, TiO₂, Bi₂O₃, Li₂O, Na₂O, and B₂O₃; optional components in the form of BaO, ZnO, K₂O, Sb₂O₃, and As₂O₃; where the content of Bi₂O₃ is from 0.5 to 15 molar percent; the combined quantity of Nb₂O₅, WO₃, TiO₂, and Bi₂O₃ is from 25 to 45 molar percent; the combined quantity of Li₂O, Na₂O, and K₂O is less than or equal to 42 molar percent; the combined quantity of the essential components and optional components is greater than or equal to 98 molar percent; the refractive index (nd) is from 1.75 to 2.0; and the Abbé number (vd) is from 18 to 30;

in that a gob of the glass in a molten state has been solidified; and
in that the preform has been shaped without mechanical processing.

19. (canceled).

20. (original): A method of manufacturing a press molding preform characterized by comprising the steps of:

separating a prescribed weight of glass melt from a glass melt flow, and
forming a press molding preform comprised of this prescribed weight of the optical glass
according to claim 1.

21. (original): A method of manufacturing a press molding preform characterized by comprising the steps of:

separating a prescribed weight of glass melt from a glass melt flow, and
forming a press molding preform comprised of this prescribed weight of the optical glass
according to claim 2.

22.-26 (cancelled)

27. (original): An optical element comprised of the optical glass according to claim 1,
which is in the form of a precision press-molded article.

28. (original): An optical element comprised of the optical glass according to claim 2,
which is in the form of a precision press-molded article.

29.-33 (cancelled)

34. (original): An optical element obtained by precision press molding the precision
press molding preform according to claim 10.

35. (original): An optical element obtained by precision press molding the precision
press molding preform according to claim 11.

36.-40 (cancelled)

41. (original): An optical element obtained by precision press molding the precision
press molding preform according to claim 17.

42. (original): An optical element obtained by precision press molding the precision
press molding preform according to claim 18.

43. (cancelled)

44. (original): An optical element obtained by precision press molding a precision press
molding preform manufactured by the method of manufacturing according to claim 20.

45. (original): An optical element obtained by precision press molding a precision press molding preform manufactured by the method of manufacturing according to claim 21.

46.-50. (cancelled)

51. (original): A method of manufacturing an optical element characterized in that the precision press molding preform according to claim 10 is heated and precision press molded.

52. (original): A method of manufacturing an optical element characterized in that the precision press molding preform according to claim 11 is heated and precision press molded.

53.-57. (cancelled):

58. (original): A method of manufacturing an optical element characterized in that the precision press molding preform according to claim 17 is heated and precision press molded.

59. (original): A method of manufacturing an optical element characterized in that the precision press molding preform according to claim 18 is heated and precision press molded.

60. (cancelled)

61. (original): A method of manufacturing an optical element characterized in that a precision press molding preform manufactured by the method of manufacturing according to claim 20 is heated and precision press molded.

62. (original): A method of manufacturing an optical element characterized in that a precision press molding preform manufactured by the method of manufacturing according to claim 21 is heated and precision press molded.

63.-67. (cancelled)

68. (original): The method of manufacturing an optical element according to claim 51 wherein the preform is introduced into a pressing mold, both the pressing mold and preform are heated together, and precision press molding is conducted.

69. (original): The method of manufacturing an optical element according to claim 52 wherein the preform is introduced into a pressing mold, both the pressing mold and preform are heated together, and precision press molding is conducted.

70.-74. (cancelled)

75. (original): The method of manufacturing an optical element according to claim 58 wherein the preform is introduced into a pressing mold, both the pressing mold and preform are heated together, and precision press molding is conducted.

76. (original): The method of manufacturing an optical element according to claim 59 wherein the preform is introduced into a pressing mold, both the pressing mold and preform are heated together, and precision press molding is conducted.

77. (cancelled)

78. (original): The method of manufacturing an optical element according to claim 61 wherein the preform is introduced into a pressing mold, both the pressing mold and preform are heated together, and precision press molding is conducted.

79. (original): The method of manufacturing an optical element according to claim 62 wherein the preform is introduced into a pressing mold, both the pressing mold and preform are heated together, and precision press molding is conducted.

80.-84. (cancelled)

85. (original): The method of manufacturing an optical element according to claim 51 wherein the pressing mold and preform are separately heated, the preheated preform is introduced into the pressing mold, and precision press molding is conducted.

86. (original): The method of manufacturing an optical element according to claim 52 wherein the pressing mold and preform are separately heated, the preheated preform is introduced into the pressing mold, and precision press molding is conducted.

87.-91. (cancelled)

92. (original): The method of manufacturing an optical element according to claim 58 wherein the pressing mold and preform are separately heated, the preheated preform is introduced into the pressing mold, and precision press molding is conducted.

93. (original): The method of manufacturing an optical element according to claim 59 wherein the pressing mold and preform are separately heated, the preheated preform is introduced into the pressing mold, and precision press molding is conducted.

94. (cancelled)

95. (original): The method of manufacturing an optical element according to claim 61 wherein the pressing mold and preform are separately heated, the preheated preform is introduced into the pressing mold, and precision press molding is conducted.

96. (original): The method of manufacturing an optical element according to claim 62 wherein the pressing mold and preform are separately heated, the preheated preform is introduced into the pressing mold, and precision press molding is conducted.

97.-101. (cancelled)